STERILIZATION WRAP WITH ADDITIONAL STRENGTH SHEET

BACKGROUND

[0001] Personnel in the Central Service Room (CSR) or the Sterile Processing Department (SPD) of hospitals are charged with the responsibility of packaging surgical supplies to ensure the sterility of the packaged contents from the point of sterilization to the point of reuse. Surgical supplies that are candidates for being reused include clamps, scalpel blade handles, retractors, forceps and scissors. These supplies can be placed in stainless steel instrument trays while softer goods such as surgeon towels, drapes and gowns are packaged. The instrument tray and package are generally wrapped with two sheets of material commonly known as sterilization wrap.

[0002] The sterilization wrap is usually a woven or a nonwoven material that is wrapped around the tray or package in a certain prescribed manner to permit entry of sterilizing vapor/gas for sterilization purposes while denying ingress of contaminants such as bacteria and other infectious causing material. Current sterilization procedures often call for double wrapping in that the contents are wrapped into two sterilization sheets either sequentially or simultaneously. The sterilization-wrapped package is placed into an autoclave that sterilizes the contents by heat and steam. Alternatively, ethylene oxide sterilization or hydrogen peroxide gas plasma sterilization may be employed.

[0003] After sterilization, the sterilization wrap and associated contents are typically taken to a prescribed area for storage. Subsequently, the wrapped package may be taken to the point of use and the wrap removed. Tears or holes in the sterilization wrap that may occur at various points from sterilization to use may compromise the contents. For example, if a large number of instruments are placed into the instrument tray for sterilization the resulting weight on the sterilization wrap could be from 25 to 30 pounds (11.34 kg to 13.61 kg) or more. Sterilization wraps with sterilized contents are sometimes placed onto wire shelves for storage. Sliding of the sterilization wrap with the sterilized contents may cause tearing of the sterilization wrap and necessitate a repeat of the sterilization procedure with a new sterilization wrap.

SUMMARY

[0004] Various features and advantages of the invention will be set forth in part in the following description, or may be obvious from the description, or may be learned from practice of the invention.

[0005] The present invention provides for a sterilization wrap that may be used in a sterilization procedure for sterilizing instrument trays, instruments, and other items. The sterilization wrap includes a first sheet that allows sterilization gas but prevents bacteria from passing therethrough. A second sheet is attached to the first sheet and is located on the first sheet so that the perimeter of the second sheet is contained entirely within the perimeter of the first sheet. The second sheet provides added strength to the sterilization wrap to prevent the instrument tray, instruments or other items wrapped and stored by the sterilization wrap from tearing or ripping therethrough during use and/or storage.

[0006] The second sheet may be configured in other exemplary embodiments for providing a barrier to prevent bacteria from passing therethrough. The second sheet may have a higher basis weight than the first sheet in accordance with certain exemplary embodiments so as to provide additional strength to the sterilization wrap.

[0007] The first sheet may be a laminate formed from a meltblown layer positioned between a pair of spunbonded layers. Additionally, the first sheet may include a pair of the aforementioned laminates that are joined to one another by a plurality of spaced apart and separate bond points. Each of the laminates has a basis weight of from about 0.5 to about 3.5 ounces per square yard (16.96 gsm to 118.69 gsm). Such a configuration of the sterilization wrap is commonly known as a "one step" wrap in that a double wrapping is effected through a single wrapping procedure since a pair of laminates in the first sheet are present. Alternatively, the first sheet may be a single laminate as previously stated. Here, double wrapping may be effected through either a sequential or simultaneous process.

[0008] The first and second sheets may be variously sized and oriented with respect to one another in accordance with different exemplary embodiments. For example, both the first and second sheets may have a rectangular shaped upper surface. The second sheet may be oriented on the first sheet so that the sides of the second sheet are oriented generally at 45° angles to the sides of the first sheet. The relative size of the area of the upper surfaces of the first and second sheets may be varied. For example, the surface area of the second sheet may be from 27% to 54% of the surface area of the first sheet in accordance with one exemplary embodiment.

[0009] The first and second sheets may be attached to one another so that the second sheet does not move with respect to the first sheet during placement, wrapping, storage and transportation of the instrument trays, instruments or items desired for sterilization. Attachment between the first and second sheets may be effected through a variety of mechanisms such as adhesives, hook and loop type fasteners, tape, and bonding.

[0010] These and other features, aspects and advantages of the present invention will become better understood with reference to the following description and appended claims. The accompanying drawings, which are incorporated in and constitute part of this specification, illustrate embodiments of the invention, and together with the description serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth more particularly in the remainder of the specification, which makes reference to the appended figures in which:

[0012] FIG. **1** is a perspective view of a sterilization wrap in accordance with one exemplary embodiment.

[0013] FIG. **2** is a side view of a sterilization wrap that has a first sheet with a pair of laminates in accordance with one exemplary embodiment.

[0014] FIG. **3** is a top view of a sterilization wrap in which the second sheet is oriented at an angle to the first sheet in accordance with one exemplary embodiment.